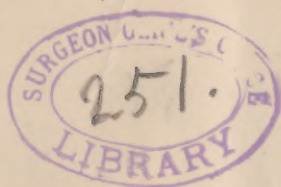


Ferguson (S.M.)

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THE DIOPTRIC SYSTEM AND ITS RELATION TO THE OLD SYSTEM OF NUMBERING LENSES.

OLD SYSTEM.						NEW SYSTEM.					
Number of Glass.	Focal Distance in Inches, English or Paris, with Index of Refraction, 1.53. .	PARIS INCHES.		ENGLISH INCHES.		Number of Glass.	Focal Distance in Millimeters	PARIS INCHES.		ENGLISH INCHES.	
		Focal Distance in Millimeters.	Equivalents in Dioptries.	Focal Distance in Millimeters.	Equivalents in Dioptries.			Focal Distance in Paris Inches	Corresponding No. in Old System with an Index of Refraction 1.53.	Focal Distance in English Inches.	Corresponding No. in Old System with an Index of Refraction 1.53.
72	67.9	1,835	0.54	1,719	0.58	0.25	4,000	148.00	156.0	158.0	167.48
60	56.6	1,530	0.65	1,433	0.70	0.5	2,000	74.00	78.0	79.0	83.74
48	45.3	1,224	0.82	1,146	0.87	0.75	1,333	49.00	52.0	52.7	55.86
42	39.6	1,070	0.93	1,003	1.00	1.00	1,000	37.00	39.2	39.5	41.87
36	34.0	919	1.09	861	1.16	1.25	800	29.6	31.2	31.6	33.49
30	28.3	756	1.31	716	1.4	1.5	666	24.6	26.1	26.3	27.87
24	22.6	611	1.64	572	1.7	1.75	571	21.	22.3	22.6	23.96
20	18.8	508	1.97	476	2.1	2.	500	18.5	19.5	19.7	20.88
18	17.0	460	2.17	430	2.32	2.25	444	16.4	17.4	17.5	18.55
16	15.0	405	2.47	380	2.63	2.5	400	14.8	15.6	15.8	16.74
15	14.1	381	2.62	357	2.8	3.	333	12.3	13.0	13.16	13.94
14	13.2	357	2.80	334	2.99	3.5	288	10.5	11.1	11.3	11.89
13	12.3	332	3.01	309	3.2	4.	250	9.25	9.8	9.9	10.49
12	11.3	305	3.28	286	3.5	4.5	222	8.22	8.7	8.8	9.32
11	10.3	278	3.60	261	3.83	5.	200	7.4	7.8	7.9	8.37
10	9.4	254	3.94	238	4.2	5.5	182	6.72	7.1	7.18	7.61
9	8.5	230	4.35	215	4.65	6.	166	6.16	6.5	6.6	7.00
8	7.5	203	4.93	190	5.27	7.	144	5.29	5.6	5.64	5.98
7	6.6	178	5.62	167	6.00	8.	125	4.6	4.88	4.9	5.19
6½	6.13	166	6.03	155	6.44	9.	111	4.11	4.35	4.4	4.66
6	5.6	151	6.62	142	7.00	10.	100	3.7	3.92	3.9	4.13
5½	5.2	141	7.09	132	7.62	11.	91	3.36	3.56	3.6	3.81
5	4.7	127	7.87	119	8.40	12.	83	3.08	3.26	3.3	3.5
4½	4.2	114	8.77	106	9.40	13.	77	2.84	3.01	3.	3.18
4	3.8	103	9.71	96	10.4	14.	71	2.64	2.8	2.8	2.97
3½	3.3	89	11.2	84	12.00	15.	67	2.47	2.62	2.6	2.76
3¼	3.1	84	11.9	78	12.7	16.	62	2.3	2.44	2.5	2.65
3	2.8	76	13.3	71	14.1	17.	59	2.18	2.34	2.3	2.43
2¾	2.6	70	14.3	66	15.2	18.	55	2.06	2.18	2.2	2.33
2½	2.36	64	15.6	59	16.7	20.	50	1.85	1.96	1.9	2.01
2¼	2.1	57	17.5	53	18.8						
2	1.88	51	19.6	47	20.9						

THE

LOUISVILLE MEDICAL NEWS.

"NEC TENUI PENNĀ."

SATURDAY, JUNE 6, 1885.

Original.

THE DIOPTRIC SYSTEM, AND ITS RELATION TO THE OLD SYSTEM OF NUMBERING LENSES.

BY R. MAUPIN FERGUSON, M. D.

*Surgeon to the Eye, Ear, and Throat Department of
Louisville City Hospital.*

The superiority of the metric system over the various other systems of measurements, weights, etc., has long been conceded, and doubtless were it not for the temporary inconvenience resulting from the substitution of an unknown for a known system it would have been generally adopted long ago. It is needless to dwell on the system at large or point out the advantages, as these are so generally known to all members of the profession. It is my desire, however, to call attention to the beauties of the system in its relation to optics.

All oculists are at least theoretically acquainted with the "dioptric system," for this is the name which has been given the system of expressing the refracting power of a lens in meters.

Its advantages are so great that its adoption is very general, and I think I am safe in saying that it will not be long before the old cumbersome method will be entirely discarded. Already the majority of the foremost oculists, both of this country and of Europe, have given the seal of approbation to the new system by its adoption. All modern ophthalmoscopes are now numbered either in dioptries alone or according to both systems.

To detail the principles and advantages of the new system may appear unnecessary after their frequent description by others, but inasmuch as there is a strong tendency to adhere to the old system in this neighborhood I hope that my words may not be entirely without effect.

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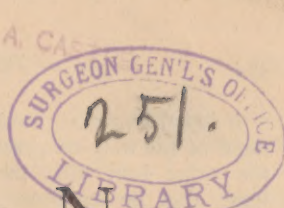
According to the old system a glass with radius of curvature of one inch is taken as the unit with which all other glasses are compared. A glass with radius of curvature of two inches would be No. $\frac{1}{2}$, as it is only about one half as strong; curvature of six inches glass numbered $\frac{1}{6}$, etc.

As the inch of England and America is not of the same length as the inch of France, Austria, Germany, etc., there is a lack of uniformity in strength of glasses made in different countries. For this reason a glass numbered, for instance, No. $\frac{1}{6}$ would have a different strength according to the country in which it was made.

Another fault, and one far more serious in its nature, is that the number of the old system instead of telling us the refractive power of the lens only informs us of the radius of curvature of the surface. A knowledge of the radius of curvature is of no practical importance, as it is the effect which the lens can produce in converging or diverging rays of light, its refractive power, which it is important to know. The radius of curvature and the refractive power of a lens are frequently nearly the same; but by substituting the first for the latter we always lose in accuracy, and if the refractive body, as for instance the lens of the human eye, differs in refractive power from that of glass, the error may be one of such magnitude that the substitution of one value for the other may be impossible.

The reason for this lies in the fact that the refractive power of a lens depends on two factors, one of which is the radius of curvature and the other the refracting power of the substance out of which the lens is made.

Thus it is quite evident that lenses numbered according to the radius of curvature alone must vary in strength; thus lenses made of plate glass, flint glass, pebble, ice or other transparent media would all vary in strength, even though the radius of curvature should be identical.



It is evident that the old system stands in need of the help of prayers, for it stands in the same box with the sinner who confesses that he has done those things which he ought not to have done, and left undone those things he ought to have done—two sins even more heinous in the eyes of science than in those of religion.

It is customary to attribute to glass of which lenses are made an index of refraction of 1.50. If this value be inserted in the formula $F = \frac{r}{2(r-1)}$ expressing the relation of the radius of curvature, index of refraction, and focal distance to one another, we obtain $F = \frac{r}{2(1.50-1)} = \frac{r}{1} = r$.

That is, if the index of refraction is 1.50, then the focal distance equals the radius of curvature. It is due to this fact that the numbers on the lenses of the old system have come to be considered as representing the focal length or power of a lens. But as the index of refraction of glass is rarely 1.50, the numbers rarely give us the focal distance. In fact, the index of refraction of glass varies within wide limits, being dependent on the substances of which it is made and on their relative proportions.

Thus, Wallaston gives the index of refraction of English and French plate glass at 1.50, Dutch plate glass, 1.517, crown glass, 1.525. Sir David Brewster, Sir John Herschel, and Wallaston obtained as the index of refraction of different samples of flint glass, 1.576, 1.578, 1.583, while other glasses have a refracting power much higher still.

The index of refraction of other transparent media may differ widely from these figures.

With such differences of refractive power it is evident that a system based on the surface curvature alone must be unsatisfactory in the extreme.

According to the new or metric system the numbers express the refracting power of the lens, the unit being a lens the focal distance of which is one meter, and is called one dioptry.

According to this system every lens, be its radius of curvature what it may and let the material of which it is made be what it may, the focal distance of which is one meter, is a lens of one dioptry. A glass with focal distance of $\frac{1}{2}$ M. is of course twice as strong, and hence is called two dioptries, expressed 2 D.; one of $\frac{1}{10}$ M. focal distance (five centimeters) is 20 D.; one of four meters focal length is $\frac{1}{4}$ as strong as the unit, and is $\frac{1}{4}$ dioptry, expressed by .25 D.

One great advantage of the metric system is that all the numbers are whole numbers or decimals, and thus the manifold computations which become necessary in dioptrics or in fitting glasses are reduced to a most delightful simplicity.

According to the old system the glasses used in practice were all weaker than the unit, and hence were expressed in fractions, making all calculations very much more complicated.

An example will illustrate the evil of the old and the beauty of the new system better than many words:

Let it be necessary, for instance, in the old system to add together two lenses, say a No. $\frac{1}{42}$ and a No. 1-6 $\frac{1}{2}$. Omitting much of the labor, which is mentally performed, we still have something like the following transformations: $\frac{1}{42} + \frac{1}{6 \cdot \frac{1}{2}} = \frac{1}{42} + \frac{1}{3} = \frac{1}{42} + \frac{28}{84} = \frac{1+28}{84} = \frac{29}{84}$.

In the new or dioptric system the same thing is done by simply saying .75 D.+6. D.=6.75 D. If the necessity of performing such calculations occurred very seldom we might still persist in the use of the old system, but when it becomes a matter of daily annoyance—for such it is to every oculist—it evidently becomes a matter of prime importance to substitute whole and decimal numbers for simple and compound fractions. Another fault of the old system is the irregularity of the interval between the lenses in the test cases. This interval varies from .11 D., to 2.20 D., and has no unit whatever as a basis.

According to the dioptric system the glasses follow one another in regular succession according to their power—the basis being a glass of one dioptry, quarters and halves being introduced among the weaker glasses.

Inasmuch as at present we are in a transition stage from the old to the new system, it is necessary to understand both systems and the relation existing between the two systems so as readily to change values expressed in the one system into those of the other.

For all practical purposes the transposition is very simple.

It is merely necessary to bear in mind that a glass of one dioptry has a focal distance of 1 M.=40 inches (39.37079"). If 1 D.=40", then 2 D., being twice as strong, must equal $\frac{40}{2}=20$ "; 10 D.= $\frac{40}{10}=4$ ", .25 D. ($\frac{1}{4}$ D.), being only $\frac{1}{4}$ as strong, must equal (4×40) 160", etc.

Again, a No. $\frac{1}{8}$ with focal distance of 8"

being five times as strong as one of 40", focal distance=1 D., must be 5 D. To generalize this, let D=number of dioptries, and N focal distance in inches (old system) and the formulæ $D=\frac{4}{N}$ and $N=\frac{4}{D}$ will suffice for effecting the exchange.

For instance, what is the equivalent in dioptries of a No. $\frac{1}{8}$?

Substituting 8 for N in the above formula we have $D=\frac{4}{8}=5D$.

Again, given No. 10 of the dioptric system, to what number according to the old system is it equivalent? Substituting 10 in second formula gives $N=\frac{4}{10}=4$ or No. $\frac{1}{4}$.

The accompanying table shows the relations between the old and new systems. It is taken from Landolt's Examination of the Eyes, some few unimportant corrections having been made in the figures.

LOUISVILLE, Ky.

A MONSTER.*

BY JAMES C. PEARSON, M. D.

In last January I was called to wait on a lady in her first confinement. When I came to make an examination by vagina, I was unable to distinguish the part presenting. After a practice of almost forty years I felt pretty well qualified to recognize by the sense of touch the features of any presenting part of a fetus, but I was perplexed for a time in this case.

I first thought that the head was covered by the decidua, but as this theory was not satisfactory I abandoned it, and tried passing my index and middle fingers along the side of the part presenting to satisfy myself, if possible, as to its identity—if it was the head, to reach one of its ears, or the base of the occiput, etc.

After much perseverance I reached what I believed to be the ear and base of the occiput, yet the peculiar feel of these supposed features mystified any knowledge they might give of the presentation. Being thus in doubt, I resolved to bide my time and see what a few pains might develop in the case. As the pains progressed my anxiety became intense, but after no great time what really proved to be the head was protruded through the vulva. The body soon followed, and when I came to look on the child I was surprised to see two red flashing eyes gazing at me from under two fan-like lobes, which towered disproportion-

ately over the eyes. This gave the child a hideous appearance, and I must confess that I was at loss for a name when I was asked what it was. The calvarium was wanting, and the space described by the lower cranial bones was filled by the two lobes, which seemed to consist of the encephalic meninges filled with water. The eyes projected, the right was larger than the left, and the conjunctivæ of both were a bright scarlet. A resemblance of the head to that of the horse was pointed out by some imaginative persons who were allowed to see the child. The face below the eyes was natural, and the child's body was well formed. It did not cry, or make any sounds save those of respiration. The monster lived about seventy-two hours.

The mother says that soon after she became pregnant she read in a newspaper an account of a man's having his brains split out with an ax in the hands of a murderer. This made a deep impression upon her mind, haunting her like an evil phantom for many weeks. While still in this morbid state of mind she took a ride in a carriage, during which the horses suddenly took fright and, becoming almost unmanageable, put her in great terror, which, however, was not sufficient to cause her to stop thinking, even for a moment, of the horrible murder of which she had read. She attributes the deformity of her child to impressions made upon her mind by reading and thinking of the murder, but doubtless those who saw in the anencephalic head such a striking resemblance to that of the horse would find good warrant for a *post hoc propter hoc* theory of causation in the terrifying circumstances of the ride.

MITCHELL, IND.

OPIUM POISONING.

BY JOHN L. BROWN, M. D.

The following is a report of a case of opium poisoning which occurred in Mount Sterling, Ky., on Monday, May 18th:

J. G., male (colored), age eighteen, who resides in this city, and who has been for some time a constant sufferer from neuralgia, which rendered his life miserable, took with fatal intent on the 18th inst. about twelve grains of the sulphate of morphine, and repaired to his room. On entering where he lay, about one hour after the dose was supposed to have been taken, his

*Read before the Lawrence County, Indiana, Medical Society at its last meeting.

Miscellany.

mother found him in a deep sleep; she made an effort to arouse him, and finding that she could not, she sent for me. I answered her call immediately, and found the patient unconscious, completely relaxed, and deeply cyanosed. Deglutition was impossible; pulse 39, respirations 3 per minute, pupils contracted to the size of a pin-head. He was given some passive exercise and was most thoroughly rubbed. Under this the patient aroused sufficiently to take sulphate of zinc, twenty grains, his respirations having increased to 5 per minute. One half hour later, the pulse was 38 and respirations 3 per minute. There were no convulsions. I then gave him one third of a grain of the sulphate of atropia hypodermically in twenty drops of water. Vomiting had not occurred. Under flagellations he aroused sufficiently to swallow thirty grains of pulv. ipecac., which was given in water, followed by large quantities of warm water. The exercise was continued, and in fifteen minutes after the administration of the atropine his respirations became more frequent and of a spasmodic character: pulse 45. The flagellations were continued. About one hour later the surface of his body became very cold, while the nose, ears, and hands again became pinched and cyanotic. Noting this I immediately gave him one sixth of a grain of atropia hypodermically. In a short while his pulse became rapid, and the heart active, but very irregular. About one hour after receiving the last dose of atropia the heart's action, though more frequent, was growing regular. The pupils were unchanged. He had not vomited at this time. Walking and manipulation were continued. Half an hour later he began to show signs of consciousness. The pupils began to dilate, the pulse was 50, and the respirations 10 per minute. One hour and a half later consciousness was completely restored, he had begun to be restless, and complained of pain in his stomach, which was of course very much distended, emesis not having yet taken place. I then administered hypodermically one twelfth grain of apomorphia—three minutes after which emesis occurred. One hour later the patient expressed himself as "feeling very well," and took a walk. Next morning I saw him at his place of business, completely recovered from the effects of the opium. His neuralgia has not returned.

MOUNT STERLING, KY.

THE State medical societies of Ohio and Wisconsin met during the past week.

CINCINNATI AND THE CODE.—The Cincinnati correspondent of the New York Medical Journal thinks that there will soon be a revolution in the medical politics of that city. He says the "code question," which has torn up New York, is the irrepressible issue of the near future in Cincinnati. It is asserted by members of the Cincinnati Medical Society that members of the Academy consult with irregulars, and the Academy people return the charge. If all the witnesses in the case are credible, the conclusion is irresistible that some individuals, at least, in both camps do not decline a fee when it is to be obtained by transcending the provisions of the code. It is a fact that in Cincinnati a large proportion of physicians do extend more or less of recognition to irregulars. They do it, if not clandestinely, yet not openly. The practice is much more than winked at. If the physicians who meet irregulars in consultations were to frankly compare notes under this head, they would be surprised to find what a formidable party they comprised. There is but little doubt that the comparison of notes will be made some day, that the revelation of strength will be made, and that the assertion of the position will then ensue. When that time comes there will be a repetition here of the war that has so recently been waged in New York. The old lines will be readjusted, and the medical politics of that eventful hour will bring strange bedfellows.

HYPNOTIC CHICAGO.—The profession in Chicago have had a curious experience. A well-known member of the Chicago Medical Society read before it a lecture on mesmerism, or "hypnotism," as the modern fashionable word is, and illustrated it with a living example. The members were profoundly impressed, and an interesting and learned discussion followed. But some one of them of an investigating turn of mind pursued the subject further, and discovered that the "able paper" was largely cribbed from an encyclopedia, and that the subject was what they call in that enlightened metropolis a "horse," in other words, one who hires himself out to professional mesmerists for exhibitions. These "horses" must have a hard time. They submit to having pins thrust in their flesh, red pepper put in their eyes without wincing, and pretend that

they believe themselves to be George Washington or Daniel Webster at the wink of the mesmerist. It appears to be quite an avocation in Chicago, a city which is nothing if not progressive.

The result of it is that there is not a man left in Chicago who has faith in any variety of ism whatever; and no energetic young doctor out there cares aught for psychical research, but devotes his undivided attention to patients on the avenues, with an occasional dip into fall wheat and mess pork. To use one of their own expressions, it will be a cold day when the next mesmerist catches the Chicago profession napping.—*Medical and Surgical Reporter*.

JAPANESE DENTISTRY.—The Maryland Medical Journal says that in Japan the extraction of teeth has reached a degree of perfection absolutely unknown in France, and we might say in Europe or America, where they have good schools of dentistry. The Japanese dentists do not overwhelm their victims by a display of the instruments of torture with which our artists draw their clients' bad teeth, not to mention the sound ones. It is with the thumb and index fingers that the Japanese artist delicately withdraws you a molar or two. Naturally, great practice is required before arriving to such a degree of skillfulness. To obtain this the pupil serves an apprenticeship to a master. For a long time he has to exercise himself in extracting bits of wood inserted in planks, loosely at first, but afterward solidly fixed by hammer-strokes in oak wood. When the pupil can, at a single trial and without apparent effort, draw out one of these wooden teeth, any human jaw can be confided to his care, and no tooth, though fixed in a steel alveolus, can resist him. A skillful Japanese operator can in half a minute, and without moving his fingers from the victim's mouth, remove easily his half dozen teeth.

THE MODERN GYNECOLOGIST.—Gynecologist and Patient, who had married a widower with several children, one of whom was in the waiting-room. *Gynecologist*, looking through the speculum: "How many children have you?" *Patient*: "We have four in the family, doctor." "Ah! four children. That explains the condition of your cervix, madam. It was badly lacerated at your last confinement, and can only be relieved by trachelorrhaphy." "But, doctor, ain't you mistaken? I—" "Mis-

taken, madam! Impossible. I tell you, you have laceration of the cervix, dating from your last confinement." "But, doctor—" "Now, madam, I know what is the matter with you, and it's no use for you to volunteer any further information. You must submit to an operation." "But doctor, I *will* speak. I never had a child. The children we have are my husband's by a former marriage." *Tableau.—Medical Age*.

A NEW ANTIPYRETIC.—Dr. Francis Kinnecutt (Medical Record), during the past three months, has been carrying on a careful study of the effects of hydrochinon. The chemical name of this drug is dihydroxyl benzole, and it was found by Brieger (*Berliner Med. Wochenscher*, No. 29, 1884) to be a marked antipyretic. Dr. K. has been giving it in doses of fifteen to twenty grains. The conclusions drawn from his experience are the following:

1. That in hydrochinon we possess a new and most efficient antipyretic.
2. That its use is apparently unattended with any injurious effects.
3. That the antipyretic effects of a single dose is comparatively temporary, resembling in this respect that of kairin, thallin, and antipyrin; that the maintenance of moderate temperatures in hyperpyretic conditions can be safely obtained, however, by repeated doses.
4. That while apparently without effect in arresting a specific disease process, its employment is conservative and productive of a marked amelioration of many of the symptoms incident to high temperature.
5. That with our as yet limited experience with the drug it should be given prudently, and its effects carefully observed.

THE following officers were chosen at the meeting of the Illinois State Medical Society, which met in Springfield, May 19th, 20th, and 21st: President, Dr. W. A. Byrd, of Quincy; First Vice-President, Dr. W. T. Kirk, of Atlanta; Second Vice-President, Dr. A. Wetmore, of Waterloo; Permanent Secretary, Dr. S. J. Jones, of Chicago; Assistant Secretary, Dr. Heman Luce, of Bloomington; Treasurer, Dr. Walter Hay, of Chicago.

CHOLERA AT MARSEILLES.—The daily press states that cholera has appeared at Marseilles. The local authorities declare that the town is in a bad sanitary condition, and will probably not escape the disease.

LOUISVILLE MEDICO-CHIRURGICAL SOCIETY.—At the last meeting of this Society, May 27th, the officers for the ensuing year were elected. President, Dr. Ap Morgan Vance; Vice-President, Dr. H. A. Cottell; Secretary and Treasurer, Dr. R. Maupin Ferguson. Dr. J. W. Holland, the retiring president, vacated his place of honor with some brief but well timed remarks, and the annual report of the Secretary showed that the Society meetings had been well attended and marked by an unusually large number of case reports and essays.

ENTERITIS CAUSED BY CORROSIVE SUBLIMATE.—Dr. G. L. Peabody read a paper recently before the Practitioners' Society of New York, on toxic enteritis caused by corrosive sublimate as a surgical dressing. Attention was first directed to this by reports of cases found in German medical journals. In the records of the New York Hospital eleven cases were recorded in which an obstinate diarrhea followed the use of sublimate as a surgical dressing. Seven of these proved fatal. Autopsies in three of them showed extensive diphtheritic inflammation of the large intestine.

REPORT OF A CASE OF PARTIAL PYLORECTOMY.—Dr. J. M. Spear, of Cumberland, Md., reports, in the American Journal of the Medical Sciences for April, 1885, a case of partial pylorotomy in a blacksmith, aged forty, who suffered from cicatricial stenosis of the pylorus. The operation was a modification of Billroth's, and required one hour and a half for its performance. The tumor was not adherent. Death ensued in two and a half hours, from collapse. In the opinion of Dr. Spear the case was an eminently proper one for operation, but it should have been performed at an earlier period in its history.

Bartholow recommends the following in common colds (Col. and Clin. Record):

R Codeiae, gr. j;
 Syr. scillæ comp., }
 Syr. tolu, } aa ʒss.
 M. Sig: A teaspoonful, *pro re nata*.

TREATMENT OF ACUTE NEPHRITIS.—Aurecht (*Berlin. Klin. Wochenschr.*) strongly advises abstinence from the use of all stimulating diaphoretics, or diuretics which irritate the tissues, in treating acute parenchymatous nephritis. He lays much stress on the advisability of keeping the patient

in bed until the albumen disappears from the urine, and of giving as little nitrogenous food as possible, so that the kidneys may have little to excrete. At the same time he gives large quantities of liquids. For the first ten days or so he gives water, effervescing water, gruel, bread and butter, and farinaceous food. He begins to give milk or beef tea only at the end of the second week. *Practitioner.*

It is claimed that by the addition of a two-per-cent solution of the muriate of morphia to a four-per-cent solution of muriate of cocaine the anesthetic properties of the latter are made more active and permanent.

DR. WILLIAM CLENDENNIN, Dean of the Miami Medical College, died in Cincinnati a short time since. He was for some years Health Officer of that city, and a popular medical teacher.

At the recent meeting of the German Surgical Society, Prof. von Langenbeck was re-elected President, and Prof. Volkmann, of Halle, Vice-President.

DR. OLIVER WENDELL HOLMES says that a doctor's patients must put their tongues out, and a doctor's wife must keep her tongue in.

DR. H. E. SMITH, has been appointed the successor of Prof. Silliman to the chair of chemistry in the Medical Department of Yale College.

At the last meeting of the New York Neurological Society, Dr. W. R. Birdsall was chosen President.

ARMY MEDICAL INTELLIGENCE.

OFFICIAL LIST of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, from May 24, 1885, to May 29, 1885:

Major Albert Hartsuff, Surgeon, ordered from Dept. Missouri to Dept. East. *Major H. E. Brown*, Surgeon, ordered from Dept. East to Dept. Missouri. (S. O. 121, A. G. O., May 27, 1885.) *Captain Calvin De Witt*, Assistant Surgeon, ordered for duty at Newport Barracks, Ky. (S. O. 107, Dept. East, May 22, 1885.) *Captain Wm. A. Hall*, Assistant Surgeon (David's Island, New York Harbor), ordered for temporary duty at Willett's Point, N. Y., during absence of post surgeon. (S. O. 121, A. G. O., May 27, 1885.) *Captain Wm. G. Spencer*, Assistant Surgeon, ordered for duty at Fort Sisseton, D. T. (S. O. 55, Dept. Dakota, May 20th, 1885.)

The Louisville Medical News.

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J. MORRISON RAY, M. D., - - - Assistant Editor.

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IS COCAINE A MYDRIATIC?

The Lancet of May 16th states that in view of the high price of cocaine, certain French manufactures have attempted to secure more of the alkaloid than is yielded through the first infusion of the coca leaves, by submitting them to a second process of exhaustion.

The result is similar to that which follows an attempt to make an infusion or decoction of tea or coffee from leaves or grounds which have already done service for the drinker. Certain substances of interest and physiological efficacy are extracted; but the magic alkaloid which always obeys the first call of the chemist is found to have left no trace behind.

The substances obtained are said to be derivatives of hygrine, the volatile alkaloid of coca first observed by MacLagan. Later, Lossen obtained it as a thick, pale-yellow oil, having a burning taste, a strong alkaloid reaction, and an odor resembling that of trimethylamine.

Most of the derivatives of this alkaloid are decided mydriatics, though probably less powerful than atropia, since it has been observed that while eserine overcomes the

physiological effect of the former with great promptness, it is an inefficient antagonist of the latter.

In view of the very unequal, at best, and often contradictory results obtained by different observers who have reported upon the alleged power of cocaine to dilate the pupils, these facts are significant, since it is not improbable that the variation in the reported results has been due to varying amounts of hygrine derivatives in the specimens of cocaine employed.

The chemistry of cocaine is, of course, at this early date far from perfection, and it is doubtful if a specimen of the alkaloid in an absolutely pure state has been as yet obtained. When such is found, it will probably prove to be destitute of mydriatic power. These facts suggest naturally a very simple physiological test for the detection or exclusion of the hygrine derivatives in any given specimen of cocaine, and one which the ophthalmologist will doubtless turn to good account, since dilation of the pupil, while a necessary prerequisite to many operations upon the eye, is in some an annoying hindrance, if not a forestalling circumstance.

KINETIA.—Dr. J. A. Irwin, in his able paper entitled "The Influence of Sea Voyaging upon the Genito-urinary Functions," thus summarizes his theory of seasickness:

The ordinary form of seasickness, that is, the form caused by the easy gyrations of a large ocean steamer, is essentially a *disturbance of equilibration*. The initial lesion takes place within the semicircular canals of the internal ear, where the endolymph and otoliths, following the irregular movement of the vessel, convey to the sensorium erroneous impressions of the position of the head in space; this soon results in dizziness, which is followed in due course by nausea and vomiting; and even when later, as is usual in tedious cases, other parts of the organization become involved, an hyperemia of the parts concerned in equilibration remains a main factor in the general process of nervous and functional derangement. In fact, for practical purposes, seasickness may be regarded as a mild, transitory semi-physiological prototype of the non-cochlear form of Ménière's disease.

Bibliography.

A Hand-Book of Pathological Anatomy and Histology, with an introductory section on Post-mortem Examinations and The Methods of Preserving and Examining Diseased Tissues. By FRANCIS DELAFIELD, M. D., Professor of Pathology and Practical Medicine, College of Physicians, New York, and T. MITCHELL PRUDDEN, M. D., Director of the Physiological and Pathological Laboratory of the Alumni Association of the College of Physicians and Surgeons, New York; Lecturer on Normal Histology in Yale College. New York: William Wood & Co. 1885. 8vo, pp. 575. For sale by John P. Morton & Co

This book, which is an outgrowth of a smaller treatise by Prof. Delafield, and which now, amplified, extended, and remodeled, represents the joint labors of two eminent American pathologists, is a most important contribution to medical literature. The work is so constructed as to serve as a practical guide to pathological inquiry in the dead-house, and the subsequent macroscopic and microscopic study of the specimens in the laboratory. It is, therefore, well fitted to meet alike the needs of the practitioner and medical microscopist. The volume is made up of five parts. Part First is devoted to The Method of Making Post-mortem Examinations and of Preserving Diseased Tissues; Part Second, to Morbid Changes in the Circulation of the Blood—Changes in the Composition of the Blood—Degenerations—Animal Parasites and Bacteria—Inflammations—Tumors; Part Third, to Morbid Anatomy of the Organs; Part Fourth, to Lesions found in the General Diseases; Part Fifth, to Lesions found in Poisoning, and after Violent Death.

It will be seen that the scope of the work is much larger than that of contemporary books on pathology, and this we believe is a feature which will make it very popular with the practical physician, since he will find here, condensed and classified, a fund of information relative to pathological derangement or lesion never before gathered into one separate treatise.

For one who has made some research in this department of science, the book will prove of peculiar interest. Some old and favorite theories have been abandoned, while some that are new, and probably no better, have been accepted; but every where it is observable that the authors waste but little space in the discussion of moot points, while facts are laid before the reader with appropriate minuteness of detail.

The one hundred and forty-six figures which adorn the work are made from the authors' own drawings from nature. They are portraits not pictures, and in clearness of delineation and beauty of finish can not be excelled in the present state of the printing art.

A System of Practical Medicine by American Authors. Edited by WILLIAM PEPPER, M. D., LL. D., Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania, assisted by LOUIS STARR, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Vol. I, Pathology and General Diseases; Vol. II, General Diseases and Diseases of the Digestive System. Philadelphia: Lea Brothers & Co. 1885.

An advance notice in our issue of November 29, 1884, gave our readers some idea of the plan and scope of this auspicious work. The first volume was issued as per promise, in February, and the second saw the light in May. At this rate subscribers will have to wait but a year for the fifth volume, which completes the work.

In anticipation of the pleasure of being soon able to lay before our readers an elaborate review of these volumes, by one of our most eminent professors and practitioners in medicine, we shall give them but a passing notice here.

Each volume is an imperial octavo, the first having 1094 pages, and the second 1312.

Volume one discusses General Pathology and Sanitary Science and General Diseases.

Under the first head appear General Morbid Processes; General Etiology, Medical Diagnosis and Prognosis; Hygiene—Drainage and Sewerage in their Hygienic Relations.

Under the second may be found a monograph upon each of all the fevers—continued, malarial, eruptive, specific, epidemic, sporadic—pertussis, diphtheria, cholera, and the plague, leprosy, influenza, rabies, glanders, anthrax, pyemia and septicemia, and beriberi.

The contributors to this volume are the late Samuel M. Bemiss (whose masterly article on malarial fevers, here published, is doubtless his last contribution to medical literature), John S. Billings, Reginald H. Fitz, Frank P. Foster, W. A. Hardaway, Henry Heartshorne, James H. Hutchinson, James Nevins Hyde, Abraham Jacobi, John M. Keating, James Law, William T. Lusk, William Pepper, H. D. Schmidt, J. Lewis

Smith, Alfred Stillé, George E. Waring, B. A. Watson, James C. White, James C. Wilson.

In the second volume we have General Diseases continued, the subjects being Rheumatism, Gout, Rachitis, Scurvy, Purpura, Diabetes Mellitus, Scrofula, and Hereditary Syphilis. These topics consume but 254 pages, while the greater part of the volume is devoted to Diseases of the Digestive System. Here the reader will find that no pathological manifestation or lesion, which can in any manner roughen or obstruct or mar the symmetry and beauty of the *prima viæ* and its accompanying viscera, from the fungiform papillæ at the tip of the tongue to the membranous plications at the verge of the anus, has escaped attention.

The contributors to this volume are Samuel G. Armor, Edmonson I. Atkinson, Roberts Bartholow, Samuel C. Busey, Alonzo Clarke, J. Solis Cohen, W. H. Draper, R. Palmer Howard, Abraham Jacobi, W. W. Johnston, Joseph Leidy, John S. Lynch, Thos. G. Morton, J. Lewis Smith, Louis Starr, James Tyson, Philip S. Wales, William H. Welch, Henry M. Weatherill, jr., William J. White, James T. Whittaker.

Every disease is made the subject of an admirable monograph, which presents the reader with all the light which science has thrown upon it up to this day.

The work is, of course, thoroughly representative of American practice and teaching, since the contributors are selected from every section of the country.

It is sold by subscription at a low figure, and is destined to run rapidly through an immense edition. Prices, per volume: cloth, \$5; leather, \$6; half russia, \$7.

Henke's Atlas of Surgical Anatomy. A Series of Plates Illustrating the Application of Anatomy to Medicine and Surgery. Translated and edited by W. A. ROTHACKER, M. D., Pathologist to the Cincinnati Hospital, Lecturer on Pathological Anatomy in Miami Medical College. Cincinnati: Anton Bicker, Publisher, successor to A. E. Wilde & Co., 78 and 79 Johnston Buildings.

This work is a series of eighty-one plates, so drawn and arranged as to enable the surgeon to contemplate at a single view the relational anatomy of any region in which he may be called to operate. As an aid to the physician also in recalling the relations of the thoracic, abdominal, and pelvic viscera for diagnostic purposes it must prove invaluable.

Each region is delineated with remarkable truth to nature, and each organ is pointed out by its name, boldly printed, in the margin, with a line running from the former to the latter. By this arrangement mistakes are impossible, and the pictures are made fit to serve the beginner in the private study or the college dissecting-room.

The plates are printed on heavy smooth paper, in large quarto, and the book is bound in strong boards, elegantly finished in cloth, with leather back and corners.

A work more serviceable to the surgeon, the physician, and the student has not recently fallen from the press, and we believe that the publisher will realize a handsome margin over the large expense of this worthy venture, so soon as the peculiar merits of the Atlas are made known to the profession in America.

The Student's Manual of Histology. For the use of Students, Practitioners, and Microscopists. Third edition, entirely rewritten; greatly enlarged and newly illustrated. By CHARLES H. STOWELL, M. D., F. R. M. S., Professor of Histology and Microscopy, and in charge of the Histological Laboratory of the University of Michigan. Illustrated by 178 engravings. 8vo, pp. 368. Ann Arbor, Mich., U. S. A.: Charles H. Stowell, Publisher. 1884.

The overworn expression that a book meets a long-felt want may be applied to this manual of histology without quotation marks or blushes, and no teacher of practical microscopy will, on investigating the subject, fail to commend the application.

We have many excellent treatises on histology, 't is true, but, being either too voluminous, or badly arranged or wanting in some important particular, none meets the needs of the student so fully as this. This is no more than might have been expected in a book which comes from the pen of this able, accomplished, industrious and experienced teacher, investigator, and writer. The work begins with a practical chapter upon the microscope, in which the mechanical optical peculiarities of the instrument are briefly but clearly set forth.

The second chapter deals with the preparation of objects for study, giving the latest and best methods for injecting, hardening, staining, and mounting the specimens which should come to the hand of the student.

The third chapter gives an exposition of the cell. In this the modern biological doctrines receive due attention. The eccentricities of the ameba are well illustrated

and the intra-cellular network of Heitzmann is made to resolve itself into a pabulum of structureless protoplasm. In the twenty-three chapters which follow, the blood, with every tissue of the body, is made the subject of careful and systematic study. The text is full and accurately descriptive, while the illustrations are exceptionally clear and beautiful.

The last chapter, the twenty-second, is devoted to starch, and proves to be an admirable exposition of this all-important department of vegetable histology. Its appropriateness as a finishing touch to a work devoted to animal histology may be questioned, since the corpora amylacea have been relegated to the rubbish of post-mortem change, but no one will deny that it adds materially to the value of the work.

Correspondence.

LONDON LETTER.

[FROM OUR SPECIAL CORRESPONDENT.]

At the *conversazione* of the Medical Society of London, Professor Humphry delivered a lecture on the subject of Old Age. This, he said, ever since his youth, had been a fascinating study to him, though for various reasons he had been prevented from following it up. An inquiry, however, had lately been set on foot to investigate the subject of longevity, and the remarks which he had to make would be in relation to some of the results which had been attained by this inquiry. After a brief reference to the changes which age produced in the system, and a longer one to the relations between disease and death from earlier periods to the present time, Professor Humphry proceeded to lay down the rules under which long life might be attained. The first requirement for longevity was capability for resistance and endurance, and that each organ should be sound in itself, and strong in relation to others. The second requirement was freedom from exposure. Women in both, and notably the second, had a great advantage over men, and this fact was manifested in the greater longevity of women. It was also in some part due to a more inherent vitality in the longer-lived sex. In the first year of life the mortality among males was much greater than among females, and here at the very beginning the latter got a start of the former,

which was retained and improved to the end of life. They had found from their inquiry that the average height of women was five feet three inches, and that of men five feet six inches. In pulse and respiration the women had the advantage, their pulse being 89 in comparison to the men's 73, while the latter's respiration was 19 as against 22 of the weaker sex. The greater proportion of these old-lived people came of long-lived families. Their way of living on the whole might be summed up as follows: They had not much to eat, but had good appetites, good sleep, and did not suffer from indigestion. They were small eaters, and did not take much medicine or alcohol. The bones of men and women which, up to maturity, increased in weight, after that period lost considerably in that respect, though they did not decrease in size, but more often increased, and to this increase might be attributed the bony appearance which many old people presented. The average number of teeth in men and women above eighty years of age was six and three respectively. Our ancestors seemed to have been better off in this respect, as most of the skulls which had been found showed a good supply of teeth. But civilization was doing something at all events to remedy the evil she brought in her train, and the substitutes which were provided had several advantages which could not be claimed for the real article. The aged body did not seem more prone to disease than the younger one, and the susceptibility to contagious diseases diminished from birth to old age. But after all length of life was not to be estimated by years as by the amount of work done, or the endeavors to promote the happiness of our fellow-creatures.

It is proposed to erect a hospital at the favorite seaside resort, Hastings, with wards on the circular plan, modeled after the kindred medical institution at Greenwich. The town and district have taken the matter up, and the new building will soon be commenced.

Countess Cowper has just published a very useful little book called *Help at Hand*. As is explained in the preface, it has been written for the use of the people; first, that they may be able to afford to buy a cheap guide to "first aid," and second, that, having bought it, they may be able without any knowledge of surgery and medicine to understand the simple rules laid down for what they should do and what they should not do in cases of emergency.

Sir W. G. Hunter, late of the Bombay Medical Service, and Dr. R. Thos. Thorne, the assistant medical officer of the Local Government Board, have just started for Rome to represent England on the International Sanitary Conference.

A young lady has just been appointed at Fordingbridge to the post of vaccination officer. Her name is Miss Isabella Oates, and her duties will extend over the whole union. The appointment has been confirmed by the Local Government Board, and has created quite a sensation.

Two curious specimens of artificial teeth have been found in an Etruscan tomb, probably dating to four or five centuries before our era. These graves contained the bodies of two young girls. On the jaw of one is still to be seen two incisors fixed to their neighbors by small gold rings; in the other the rings remained, but the artificial teeth had fallen out. The teeth, carefully cut, had evidently been taken from the mouth of some large animal. The dentist's art, among the ancients, was not confined to drawing teeth and replacing them by artificial ones, for natural ones have been found which have evidently been treated in various ways. That this curious fact has escaped notice so long is due to the rarity of Etruscan skeletons, the Etruscans employing cremation generally, and also to the circumstance that modern inquirers are more interested in objects of Etruscan art and industry than in the remains of their ancient owners.

Sir T. Spencer Wells' standard work has just been issued in a cheap form, under the title of *Diagnosis and Surgical Treatment of Abdominal Tumors*. The author has followed the plan adopted in previous editions, the present edition being not only brought up to the present date, but also much extended in scope.

The Local Government Board have just issued some plans showing how, under one roof, a perfect isolation hospital may be obtained. One of the plans shows how four beds may be placed so as to secure this end, the separation of diseases being effected by requiring the several wards and nurses' rooms to open under verandas in the outer air, and by so arranging the doors that two sets opened under a veranda to the front, and two under another at the back of the building. Special arrangements were also made by which the nurses could be provided with bed-rooms in the same building without any chance of their apartments becoming infected with ward air. This plan was

eminently adapted for securing to small towns of 4,000 inhabitants or less, or to public institutions, the maximum accommodation at the smallest cost. The larger plan is based much on the same principle, but it provides twelve beds instead of four, all under the same roof, but having no aerial communication with each other. The pavilion is not only adapted to towns of 10,000 inhabitants, but it should always be provided as one of the pavilions when two or more were to be erected, its advantages being considerable where only one or two cases of a disease were under treatment, and also for the purposes of isolating doubtful or special cases.

LONDON, May, 1885.

Societies.

LOUISVILLE MEDICAL SOCIETY.

Stated Meeting, May 21, 1885, the President, Dr. J. M. Clemens, in the chair.

Dr. J. M. Mathews opened the discussion on fistula in ano. He was frequently asked the best treatment for this condition. His reply was that no one could lay out a course of treatment applicable to all cases. Each case must be considered as an individual one. He certainly should not allow the patient to dictate the course of treatment. The result of the examination of the case must determine the course to be pursued. He cited some cases illustrating methods of treatment.

CASE I. Man, fifty years old; anemic; great general debility. Examination showed an internal opening into the rectum, through which the finger could be pushed almost into the ischio-rectal fossa. He had been treated for some time for an ulcer (?). It was discharging from one to one and one half fluid ounces of pus daily. With the knife Dr. Mathews freely laid open the left buttock, when he found no difficulty in introducing his hand into the ischio-rectal fossa. In searching with the fingers he found openings to run toward both the perineum and dorsum. Hemorrhage in this case was not the difficulty. The question that arose was, how often could the sphincter be divided without that great calamity, incontinence of feces, resulting. He divided it twice, with a favorable result.

CASE II. An habitual drinker, but not a drunkard, had been under the treatment

of an advertiser who "did not use the knife." Injections had been used. The sinus began in the scrotum, running three and a half or four inches, opening into the rectum three or four inches from the anus. The membranes were thick and firm, and cut like cartilage. Ligatures had been tried, which set up an inflammation resulting in an abscess and additional tracts being formed. Dr. Mathews laid open the whole tract, making an incision about four inches long and three and a half inches deep. An additional incision three inches long was made through the perineum, the sphincter being twice divided. Result good. Stimulants were not withdrawn during treatment. In neither of these cases did he think any treatment other than by the knife applicable.

CASE III. A superficial fistula, one and a half inches long, not opening into the bowel. Simple division with the knife produced a speedy cure.

He mentioned other methods of treatment, as injection into the sinus, which was often preferable in case of women or delicate persons. In the last case cited, a sponge tent, followed by injection of tincture iodine, would have answered. Inelastic or silk ligature, which has been abandoned by the majority of the profession, may be used where the *elastic* ligature will apply. The elastic ligature would be useless in such as the first two cases cited. The treatment by the knife he thought simpler, more rapidly done, and surer of success. All the tracts may be laid open. He had never seen serious hemorrhage follow.

Dr. Scott feared that in his advocacy of the knife Dr. Mathews would drive many patients to irregular practitioners, who claimed to cure without its use.

Dr. von Donhoff did not wholly agree as to the necessity of laying open all the tracts. He would prefer to scrape with the spoon, probe, or curette, the smaller tracts and inject with tincture iodine, while the larger tract is kept open.

Dr. Mathews did not want it understood that he always used the knife. He sometimes preferred the ligature. He saw little difference between the knife and curette, but preferred the knife.

JULIA A. INGRAM, M. D.,
Secretary.

THE New Jersey State Medical Society will hold its annual meeting at Long Branch, June 9th and 10th.

Pharmaceutical.

Conducted by Simon Flexner, Ph. G.

NORMAL LIQUID COCA.—Since the discovery of the anesthetic properties of the alkaloid cocaine coca itself has received increased attention. Many new preparations have from time to time been suggested or prepared, each having as its object the presentation of the drug in a form for exhibition so that its full effect might be obtained. That all of these are improvements on the old form in which it was and still is administered, viz., the fluid extract, we would by no means say. But one preparation, which owes its introduction to the stimulus above mentioned, well deserves notice in this connection. The preparation we refer to is the "*normal liquid coca*," of which the makers claim that in its manufacture only is used a leaf that by previous assay has been shown to contain a certain percentage of the alkaloid cocaine, and furthermore that the product resulting from it is brought to a certain standard by another determination of its alkaloidal strength: which strength, and a method of verifying it, is designated on the label accompanying the package.

This method of rendering exact and reliable preparations, which hitherto have been characterized by more or less variability and uncertainty, can not be too much encouraged, and the firm that introduces them should be rewarded for their efforts by unmistakable evidence of our appreciation.

DETECTION OF MORPHINE IN THE URINE. Natta and Lugan find that morphine, taken internally, may be detected in the urine when the quantity taken reaches one decigram or about one and a half grains per day. For this purpose the following directions are to be observed: One liter of urine is treated with about one hundred cubic centimeters of solution subacetate of lead. After the subsidence of the precipitate the colorless liquid, which contains the morphine in the form of an acetate, is to be withdrawn, and the excess of lead removed by the cautious addition of diluted sulphuric acid. Ammonia is then added to liberate the alkaloid, which is dissolved in amylic alcohol added for the purpose. The amylic alcohol in separation is treated with sulphuric acid, whereby the alkaloid is converted into sulphate, which is then isolated in the usual manner.

CANNABIMUM.—Of this new principle, extracted from *cannabis indica*, the American Druggist has the following:

This is the name of the new product prepared from *cannabis indica* and put upon the market. When cold it has the consistence of a soft extract; when heated it appears as a viscid brown balsam, transparent, in thin layers of a strongly aromatic odor, and a sharp, bitter, and somewhat scratching taste. It is insoluble in water, easily soluble in alcohol, ether, petroleum ether, chloroform, benzol, bisulphide of carbon, ethereal and fixed oils. The solutions are golden yellow when diluted, brown when concentrated. When heated on a platinum foil it leaves no residue. Its true chemical nature is not known. The experience of practitioners so far on record shows that it acts as a sedative and soporific in doses of 0.05 to 0.1 gram, without producing disagreeable effects on waking. Owing to its soft consistence it is not easily dispensed in its original form. It is best dispensed in a trituration containing ten per cent of the substance.

Selections.

AN EXPERIMENTAL AND CLINICAL STUDY OF AIR EMBOLISM.—Dr. N. Senn, of Milwaukee, read a paper before the American Surgical Association of the above title, from which we take the following from the Medical News:

As indicated by the title, it was based both upon a thorough review of the literature of the subject and a large number of original experiments. In some instances as many as forty experiments were reported in proof or disproof of a single statement. The treatise was divided into eleven chapters, from each of which were drawn a number of practical suggestions. The titles of these respective chapters were:

I. Introduction, in which the subject is considered in a general manner as regards its application to surgery, and to some extent the causes and manner of its production. The term air embolism was defined, "The pressure of free atmosphere within the vascular system during life and in sufficient quantity to give rise to symptoms of obstruction."

II. The history of air embolism.

III. The intravenous production of air. With regard to this phenomenon, he expressed the belief that it is of very rare oc-

currence, and that inasmuch as nearly all cases in which air has been found in the vessels post-mortem, where cases in which death had occurred as a result of hemorrhage, the air had been aspirated into the open mouths of the bleeding vessels. In cases in which no wound on vessels can be found, however, he thought it possible that the bubbles were a gaseous substance produced from decomposition of the blood, although it had not been found in sufficient quantity for the determination of its chemical constituents.

IV. Effect of the heart and respiration on the venous circulation.

V. Aspiration of air into the superior longitudinal sinus. This was considered chiefly with regard to its importance as a complication to operative procedures about the head. The author also considered the views of various writers in regard to its production. A number of experiments were reported, and from them a list of practical suggestions was adduced.

VI. The immediate cause of death after intravenous insufflation of air.

VII. Intra-arterial insufflation of air.

VIII. The clinical study of air embolism. In this section was considered the various symptoms that result from the entrance of air into the principal vessels of the body, together with comparative fatality of each.

IX. Experiments on venous air embolism. These experiments were made for the most part on dogs, and demonstrated, in the opinion of the author, not only the innocence of the operation of aspirating the heart, but that it is absolutely indicated as a therapeutic method in cases of the introduction of air.

X. Prophylactic treatment of air embolism. The chief of these methods are position, compression, ligature, and the aseptic tampon.

XI. The operative treatment of air embolism.

In conclusion, he submitted the following resume:

1. The presence of adventitious air in the vascular system during life gives rise to air embolism.

2. Each air embolus constitutes a mechanical source of partial or complete obstruction to the flow of blood in the vessel in which it is located.

3. Aspiration during the inspiratory movements of the chest is the direct or exciting cause of ingress of air into a wounded vein or sinus.

4. Elevation of the head is the sole predisposing cause of the entrance of air in wounds of the superior longitudinal sinus.

5. In veins, the predisposing causes consist in

(a) Elevation of the part wounded; (b) Pathological or anatomical conditions which prevent collapse of the vein when it is wounded.

6. Insufflation of a fatal quantity of air into a vein produces death by:

(a) Mechanical overdistension of the right ventricle of the heart, and paralysis in the diastole; (b) Asphyxia from obstruction to the pulmonary circulation consequent upon embolism of the pulmonary artery.

7. Insufflation of the same quantity of air into arteries is less dangerous than when introduced into veins. When death is produced in this manner it results from:

(a) Acute cerebral ischemia; (b) Secondary venous air embolism; (c) Intense collateral engorgement of the vessels of the brain and spinal cord, the manner of death being determined by the amount of air injected, and the direction in which the injection is thrown, as well as the time which has elapsed between the operation and the fatal termination.

8. Air injected into arteries is readily forced through the systemic capillaries into the venous circulation and right side of the heart by the powerful contraction of the left ventricle.

9. Air embolism of the pulmonary artery is relieved in a comparatively short time, provided the contractions of the right ventricle continue unimpaired for a sufficient length of time to force the air through the pulmonary capillaries into the general circulation.

10. The prophylactic treatment consists in proximal or double compression, or ligation, of the vein which is endangered by the operation.

11. The indirect treatment has for its objects:

(a) The prevention of the admission of air; (b) The administration by inhalation or hypodermic injection of cardiac stimulants; (c) venesection.

12. The direct or operative treatment by:

(a) Puncture and aspiration of the right ventricle; catheterization and aspiration of the right auricle, which is proposed with a view to obviate the direct cause of death by the removal of air and spumous blood, thus

relieving directly the overdistension of the right ventricle, and, at the same time, to guard against a fatal embolism of the pulmonary artery.

13. The results obtained by experiments upon animals warrant the adoption of the operative treatment of air embolism in practice, as a last resort, in all cases where the indirect treatment has proved inadequate to meet the urgent indications.

SIR ANDREW CLARK, in the Lumleian Lectures (British Medical Journal), speaking of the clinical history of bronchiectasis, notes the following points:

In the first place, the general condition of the bronchiectatic patient differs materially from the subject of tubercular phthisis, on the one hand, and the fibroid lung on the other. Pale or cyanosed, for the most part thin and stooping, distressed by paroxysms of cough, and drained by discharges of purulent and sometimes fetid expectoration, the subject of bronchiectasis displays a combination of mental and bodily energy not to be met with in any other disease.

In the second place, while in fibroid lung the disease is for the most part unilateral, and in tuberculosis bilateral, in bronchiectasis both forms occur in nearly equal numbers.

In the third place, while bronchiectasis resembles fibroid, for which it could not well be mistaken in temperature, circulation, forms of cough, kinds of expectoration, conditions of breathing, absence of *malaise*, and slowness of general progress, it differs in almost all these points from tubercular phthisis, with which it is frequently confused and has nevertheless little in common.

In the fourth place, while the excavations of fibroid occur at any part of the lung, and the excavations and tubercular disease at its summit, and while the excavations of both when they are multiple, appear in groups without definite form or order, the dilatations of bronchial tubes, found more frequently at first in the middle and lower than in the upper lobes, are arranged in order along the bronchial ramifications.

In the fifth place, while the excavations of fibroid and tubercular disease arise in the midst of consolidations, the bronchial dilatations have no necessary relations to them, and, although commonly surrounded by fibroid induration, may be often found in the midst of apparently unaltered lung.

In the sixth place, although bronchial

dilatations may be unsurrounded by peribronchial thickenings, or by pulmonary induration, chronic pleuritic neoplastic membranes are never absent.

In the seventh place, when several cylindrically dilated bronchi lie near to each other, the physical signs are sometimes such as to suggest the existence of a large cavity with rigid walls; but a careful and often repeated study of those signs will prove that they vary with the amount and time of the expectoration; and that sometimes the signs of a cavity are often wanting, and that at other times they are present only in isolated parts.

In the eighth place, in opposition to Traube and others, I contend that the sputum in bronchiectasis, similar in characters to that of advanced and regressive fibroid, frequently contains fragments of elastic tissue in two forms; first, in the form of bands, consisting of fibers running in straight lines parallel to each other; and second in the form of elastic areolæ and thickened intersecting trabeculæ. The former are exfoliated from the bronchial mucous membrane; the latter come from the pulmonary alveoli disintegrated by ulceration proceeding outward from the bronchial dilatations.

In the ninth place, the sputum in uncomplicated cases of bronchiectasis, accompanied or unaccompanied by fibroid indurations and excavations, does not, as far as my present experience extends, contain tubercular bacilli.

In the tenth place, the only certain means of distinguishing a tubercular from a bronchiectatic cavity, or of knowing when a tubercular has supervened upon a fibroid or bronchiectatic process, is the presence in the sputum of tubercular bacilli.

ALCOHOLIC PARALYSIS.—The immediate and transient effects of an excessive quantity of alcohol upon the human nervous system, whether they are manifested in the form of drunkenness, or of delirium tremens, or of an acute attack of insanity, are well known. Scarcely less evident are the effects produced upon the nervous system by a less excessive but a more prolonged abuse of alcoholic drinks. These effects may be manifested either in a general failure of physical and mental power, or in a form of disease closely resembling progressive paralytic dementia, or in various forms of chronic insanity, or in epilepsy, or in neuralgia, or in paralysis. In the acute form of alcoholic poisoning, no change in the structure of the nervous sys-

tem has been found, except that the meninges in common with the internal organs and the mucous membranes are the seat of a very decided injection and of a slight exudation. In the chronic form of alcoholism, a number of pathological changes have been discovered in the nervous system, which, however, vary greatly in different cases.

Of late years the paralysis which results from the abuse of alcohol has been accurately described by numerous observers, and the attempt has been made to discover the lesion of the nervous system which is associated with this form of paralysis. Two cases which are reported by Dr. Henry Hun, of Albany, in the *American Journal of the Medical Sciences* for April, 1885, are typical examples of this disease, and contribute to a better understanding of it.

Dr. Hun has collected the recorded cases of alcoholic paralysis, and from their study he holds that we are justified in regarding it as a special form of disease with the following symptoms: After a number of cerebral and gastric disturbances due to the alcoholic poisoning the symptoms of the disease proper commence with neuralgic pains and paresthesiæ in the legs, which gradually extend to the upper extremity, and which are accompanied at first by hyperesthesia, later by anesthesia, and in severe cases by retardation of the conduction of pain. Along with these symptoms appears a muscular weakness which steadily increases to an extreme degree of paralysis, and is accompanied by rapid atrophy and by great sensitiveness of the muscles to pressure and to passive motion. Both the sensory and the motor disturbances are symmetrically distributed and the paralysis attacks especially the extensor muscles. In addition to these motor and sensory symptoms there is also a decided degree of ataxia. The tendon reflexes are abolished, and vaso-motor symptoms, such as edema, congestion, etc., are usually present. Symptoms of mental disturbance are always present in the form of loss of memory, and in transient delirium.

The lesion is in all probability a degeneration of the peripheral nerve fibers and of the nerve cells in the cerebral cortex, together with a chronic congestion or inflammation of the pia mater. This lesion explains well the symptoms, although it is certainly curious that alcohol should not attack the spinal cord, but only the highest and lowest part of the nervous system, if one may so call the cortex of the brain and the terminal branches of the peripheral nerves.

TREATMENT OF ECZEMA.—Henry J. Reynolds, M. D., professor of dermatology in the College of Physicians and Surgeons, of Chicago, read a paper at a meeting of the Illinois State Medical Society, of which the following is an abstract:

He said an intelligent knowledge of the principles upon which treatment should be based always suggests the form of treatment that will be applicable to each case regardless of its name or location. The pathological condition being absolutely identical in no two cases, so the treatment must always vary, and a knowledge of specified lines of treatment or combinations of drugs said to be useful, with a neglect of consideration of the principles upon which treatment should be based in each individual case, in this, as in all other diseases, is liable to mislead. Therapeutically speaking he regards the disease as always either acute, subacute, or chronic, regardless of its clinical name or location, and arranges the treatment accordingly.

In the acute, as in all other acute inflammations, the great principle necessarily involved is rest, which implies not only quietude of the member or part, but *rest from all irritating influences*, as scratching, irritation of lice, friction, dirt incident to the calling of the individual, too frequent washing, etc. Soothing and protecting measures, therefore, are indicated in this stage, among which may be mentioned Carron oil, poultices, etc.

In the subacute, as in all other stages and forms, scratching must be strictly prohibited, as it is the most fruitful of all sources of aggravation.

He uses in this and the chronic conditions (either of which may at any time develop acute symptoms and require the treatment changed accordingly) pure, impalpably fine boracic acid as a dusting powder; having first gotten rid of crusts and scales by soaking with oil and washing with soap and warm water. In the chronic, however, he uses greater stimulating measures, in the way of green soap frequently rubbed in during washing. To relieve intense itching he has found nothing so effectual as a first-class letting alone.

He thinks bandaging and strapping advisable whenever practicable, and prefers the cotton roller to the rubber where there is much exudation or maceration of the skin. He reports two cases, of twelve and twenty years' standing respectively, of eczema rubrum of the leg associated with

varicose veins and ulceration, where many remedies had been tried without success, that he cured by the application of boracic acid and bandaging, and a saline laxative internally.

He says, as certain constitutional conditions predispose to the disease, and therefore necessarily aggravate or prolong it when once established, these conditions must be sought after and be corrected.

He has but little faith in the popular skin remedy, arsenic, in this or any other disease; all he knows positively of the remedy is that you can do harm with it. Chrysarobin, internally, as recommended by Stocquart, he has tried without any benefit.

COD-LIVER OIL AND LIME-WATER IN SCALDED THROAT.—I was sent for to see Alice B., aged three, who when the mother was out of the room had attempted to drink from the spout of a boiling tea-kettle, which stood on a low fire-place about level with its face. She had succeeded in taking enough in her mouth to scald her throat most severely, and when I got to the house I found the little patient collapsed, livid in the face, and evidently dying from shock. The mouth was so swollen and scalded I could form no idea as to the extent of the injury to the throat. I thought the child would not recover, but determined, as it could not take food of any sort, to give it equal parts of cod-liver oil and lime-water, as much for the sake of a dressing to the injured parts as for the nourishment the oil would afford. I ordered it to be fed with a teaspoonful every hour, and from the first the beneficial effects were truly marvelous; the pain was evidently relieved by keeping the scalded surface constantly coated with this novel Carron oil, and as the child at first only swallowed with difficulty it was longer in contact with the inflamed mucous membrane. In three days the child began to take notice, and in about a week afterward all the distressing symptoms of difficulty of breathing, which had made me fear for its life at times, had vanished. As it improved I added milk to its diet and gradually reduced the oil and lime-water. It recovered completely.—*H. D. Palmer, M. R. C. S., in Practitioner.*

THE taste and smell of turpentine are best masked by sulphuric ether. A mixture of turpentine, ʒij; ether, ʒj; syrup of orange, ʒj; and water, ʒiv, can be taken in teaspoonful doses quite readily.